2. Remarks/Discussion of Issues

Claim Summary

By the present Reply, claims 1–8, 22 and 23 have been canceled, without prejudice and without disclaimer of the subject matter. Claims 9-15 and 24-28 are pending in the application. Applicants respectfully submit that all pending claims are in condition for allowance.

Allowable Claims

Applicants note with appreciation that the Examiner has indicated that claims 12, 13 and 24 are allowable, if rewritten in independent form including all of the limitations of the base claims and any intervening claims. *See* Final Office Action, p. 9.

Although Applicants do not disagree that these claims recite allowable subject matter, Applicants have traversed the rejection of independent claim 9, discussed below, from which claims 12, 13 and 24 depend, directly or indirectly. Therefore, Applicants have not rewritten these claims in independent form.

With respect to the Examiner's statement of reasons for the indication of allowable subject matter (*see* Final Office Action, p. 9), Applicants would like to clarify the record with respect to the basis for the patentability of allowable claims in the present application. In this regard, while Applicants do not disagree with the Examiner's indication of allowability, Applicants submit that the basis for patentability of each of the claims is the respective combination of features recited therein.

35 U.S.C. §102 Rejection – Claims 1-6, 9-11, 22, 23 and 25-27

The Final Office Action of March 25, 2009, rejects claims 1-6, 9-11, 22, 23 and 25-27 under 35 U.S.C. § 102(b) as being anticipated by KIM et al. (U.S. Patent No. 6,140,765). Applicants respectfully traverse the rejection because KIM et al. does not disclose each and every element of these claims.

Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, anticipation requires that each and every element of the claimed

invention be disclosed in a single prior art reference. *See, e.g., In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990); *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice. *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991).

Applicants' silence on certain aspects of the rejection is by no means a concession as to their propriety. Rather, because the applied art fails to disclose at least one feature of the claims, for at least the reasons discussed below, Applicants respectfully submit that the rejections are improper and should be withdrawn.

Claim 9

Independent claim 9 recites as follows:

A method for manufacturing an electrical device comprising a crossover of at least a first connecting line over at least a second connecting line, at least one of said connecting lines connecting to an electrical device, the method comprising:

forming said first connecting line and said second connecting line on a substrate;

depositing an insulating layer on said first connecting line and said second connecting line, at least in an area where said crossover is to be formed;

creating an opening in said insulating layer in a position where an electrical contact is to be provided between said first connecting line and a connection point;

forming an electrically insulating structure peripherally surrounding

at least a portion of the area where said crossover is to be formed; and

depositing an electrically conductive layer on the insulating layer to connect said first connecting line to said connecting point, which connecting point may be connected to another second connecting line.

The Final Office Action asserts that forming the "first connecting line" and the "second connecting line" are respectively disclosed by second bus electrodes 10b and first bus electrodes 7b, and that depositing an "insulating layer" on the first and second connecting lines is disclosed by depositing insulating layer 13 of KIM et al. *See* Final Office Action, pp. 3-4. The Final Office Action also asserts generally that KIM et al. discloses creating an opening in the insulating layer 13 in a position where an electrical contact is to be provided between the second bus electrodes 10b (assertedly the first connecting line) and a connection point, but identifies no element or portion of KIM et al. to support this assertion. *See* Final Office Action, p. 4.

In fact, KIM et al. does not disclose creating an opening in the insulating layer 13. Rather, according to KIM et al., the insulating layer 13 is formed on top of the second bus electrodes 10b, sandwiching each of the second bus electrodes 10b between the insulating layer 13 and a buffer layer 9. *See, e.g.,* FIGs. 9c, 10c, 14c; col. 7, lines 34-35. The insulating layer 13 serves as a buffer layer separating the second bus electrodes 10b from the ramparts 14 and/or 15, which may be required to electrically isolate the second electrodes 10b in adjacent regions. *See* Fig. 10, 11, 14c; col. 7, line 65 – col. 8, line 2. The buffer layer 9 electrically isolates the second bus electrodes 10b from the first bus electrodes (7a, 7b). *See, e.g.,* FIGs. 9c, 10c, 14c; col. 7, lines 14-16.

The Final Office Action further asserts that forming an "electrically insulating structure peripherally surrounding at least a portion of the area where said crossover is to be formed" is disclosed by forming ramparts 14 and 15 of KIM et al. *See* Final Office Action, p. 4. However, the ramparts 14 do not peripherally surround at least a portion of a crossover between the second and first bus electrodes 10b and 7b, since the ramparts 14 simply run along the tops of the insulating layer 13 covering each of the second bus electrodes 10b. *See,*

e.g., FIGs. 10a-10c; col. 7, line 65 – col. 8, line 2. Likewise, the rampart 15 simply runs along the top of an insulating layer 8 covering a first bus electrode 7b. *See, e.g.,* FIGs. 6a, 6b, 9a, 11; col. 7, lines 1-4.

Accordingly, for at least the reasons stated above, Applicants respectfully submit that KIM et al. does not disclose each and every element of claim 9, and thus request withdrawal of the rejection of claim 9 under 35 U.S.C. § 102(b).

Claims 10, 11 and 25

With regard to claims 10, 11 and 25, Applicants assert that they are allowable at least because they depend from independent claim 9, which Applicants submit has been shown to be allowable over KIM et al., as well as in view of their additional recitations.

Claim 26

Independent claim 26 recites as follows:

An electrical device comprising:

a plurality of electrodes on a substrate, the plurality of electrodes corresponding to a plurality of components;

a plurality of first connecting lines electrically connected to the plurality of electrodes;

a plurality of second connecting lines, each of the plurality of first connecting lines being electrically connected to one of the plurality of second connecting lines; and

an insulating layer covering at least a portion of each of the plurality of first connecting lines and the plurality of second connecting lines,

wherein at least one first connecting line of the plurality of first connecting lines connects with one second line of the plurality of second connecting lines through an opening in the insulating layer by bridging at least one other second connecting line of the plurality of second connecting lines at a crossover, the crossover being insulated from the at least one other

second connecting line by the insulating layer and from at least one other first connecting line by an insulating structure surrounding the crossover and the opening.

The Final Office Action asserts that "first connecting lines" are disclosed by second bus electrodes 10b, that "second connecting lines" are disclosed by first bus electrodes 7b, and that "insulating layer" is disclosed by insulating layer 13. *See* Final Office Action, pp. 4-5. The Final Office Action further asserts that KIM et al. discloses "at least one first connecting line of the plurality of first connecting lines connects with one second line of the plurality of second connecting lines through an opening in the insulating layer 13 by bridging at least one other second connecting line of the plurality of second connecting lines at a crossover …." *See* Final Office Action, p. 5 (emphasis added). However, this assertion is incorrect for the following reasons.

First, the second bus electrodes 10b and the first bus electrodes 7b (assertedly the first and second connecting lines, respectively) do not appear to actually connect, but rather are insulated from one another by insulating layers 8 and 9. *See, e.g.,* FIGs. 6a, 6b, 7a, 7-1b, 9c; col. 7, lines 14-16 ("The role of the buffer layer 9 is to electrically isolate the second bus electrodes from first electrodes."). Second, there is no disclosure of an "opening" in the insulating layer 13, and the Examiner does not point to any element or portion of KIM et al. allegedly showing such an opening. Third, even if there were disclosure of an opening in the insulating layer 13, such an opening would not connect the second bus electrodes 10b with the first bus electrodes 7b, because the insulating layer 13 is on top of the second bus electrodes 10b, while the first bus electrodes 7b are below the second bus electrodes 10b. *See, e.g.,* FIGs. 9c, 10c, 14c; col. 7, lines 34-35. In order to connect the second bus electrodes 10b with the first bus electrodes 7b, an opening would have to be formed in the buffer layers 8 and 9 (which also is not disclosed by KIM et al.).

In addition, the Final Office Action asserts that KIM et al. discloses that the crossover is "insulated from at least one other second connecting line by the insulating layer and from at least one other first connecting line by the insulating structure 14, 15 surrounding the

crossover and the opening." *See* Final Office Action, p. 5. However, the ramparts 14 do not surround a crossover between the second and first bus electrodes 10b and 7b or an opening connecting the second and first bus electrodes 10b and 7b (which is not shown, as discussed above). Rather, the ramparts 14 simply run along the tops of the insulating layer 13 covering each of the second bus electrodes 10b. *See, e.g.,* FIGs. 10a-10c; col. 7, line 65 – col. 8, line 2. Likewise, the rampart 15 simply runs along the top of the insulating layer 8 covering a first bus electrode 7b. *See, e.g.,* FIGs. 6a, 6b, 9a, 11; col. 7, lines 1-4.

Accordingly, for at least the reasons stated above, Applicants respectfully submit that KIM et al. does not disclose each and every element of claim 26, and thus request withdrawal of the rejection of claim 26 under 35 U.S.C. § 102(b).

Claim 27

With regard to claim 27, Applicants assert that it is allowable at least because it depends from independent claim 26, which Applicants submit has been shown to be allowable over KIM et al., as well as in view of its additional recitations.

35 U.S.C. § 103 Rejection – Claims 1, 3 and 4

The Final Office Action of March 25, 2009, rejects claims 1, 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over KAWAGUCHI et al. (U.S. Patent No. 5,670,994) and further in view of ENDO et al. (U.S. Patent No. 6,507,384).

Without acquiescing to the propriety of the rejection, Applicants note that the rejection is moot since claims 1, 3 and 4 have been canceled, without prejudice and without disclaimer of the subject matter. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 1, 3 and 4 under 35 U.S.C. § 103(a).

35 U.S.C. § 103 Rejection – Claim 8

The Final Office Action of March 25, 2009, rejects claim 8 under 35 U.S.C. § 103(a) as being unpatentable over KIM et al.

Without acquiescing to the propriety of the rejection, Applicants note that the rejection

is moot since claim 8 has been canceled, without prejudice and without disclaimer of the subject matter. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 8 under 35 U.S.C. § 103(a).

35 U.S.C. § 103 Rejection – Claims 7, 14 and 15

The Final Office Action of March 25, 2009, rejects claims 7, 14 and 15 under 35 U.S.C. § 103(a) as being unpatentable over KIM et al. in view of KOMIYA et al. (U.S. Patent No. 6,940,214).

Without acquiescing to the propriety of the rejection, Applicants note that the rejection is moot with respect to claim 7, which has been canceled, without prejudice and without disclaimer of the subject matter.

Applicants respectfully traverse the rejection with respect to claim 14 and 15 because no proper combination of the applied references teaches or suggests every feature of these claims. Claim 14 and 15 depend, directly or indirectly, from independent claim 9, and are therefore allowable for at least the reasons discussed with respect to claim 9, as well as in view of their additional recitations. Further, Applicants submit that KOMIYA et al. does not cure the deficiencies of KIM et al., discussed above.

Accordingly, Applicants respectfully request withdrawal of the rejection of claims 7, 14 and 15 under 35 U.S.C. § 103(a).

35 U.S.C. § 103 Rejection – Claim 28

The Final Office Action of March 25, 2009, rejects claim 28 under 35 U.S.C. § 103(a) as being unpatentable over KIM et al. in view of ISHIZUKA (U.S. Patent No. 6,798,145). Applicants respectfully traverse the rejection because no proper combination of the applied references teaches or suggests every feature of this claim.

Claim 28 depends indirectly from independent claim 26, and is therefore allowable for at least the reasons discussed with respect to claim 26, as well as in view of its additional recitations. Further, Applicants submit that ISHIZUKA does not cure the deficiencies of KIM et al., discussed above. Accordingly, Applicants respectfully request withdrawal of the

rejection of claim 28 under 35 U.S.C. § 103(a).

CONCLUSION

No other issues remaining, reconsideration and favorable action upon the claims pending in the application are requested.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:
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